

Remarks/Arguments:

Claims 1-12 were pending in this application, with claims 11 and 12 withdrawn from consideration. Claim 1 has been amended to recite the step of "filling the mixture into the reservoir of a dry powder inhaler." Support for this amendment is found at paragraphs 43 and 44 of the published application. Claims 13-15 have been added. Claim 13 finds support at paragraph 44, and claims 14 and 15 find support at paragraph 43. Therefore, claims 1-15 are pending and claims 1-10 and 13-15 are directed to the elected invention.

Claims 1-10 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 6,045,828 to Bystrom et al. ("Bystrom"). Applicants respectfully disagree. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). For the reasons expressed below, Bystrom fails to recite every element of Applicants' invention. Accordingly, Bystrom does not anticipate claims 1-10. Reconsideration and withdrawal of this rejection under 35 U.S.C. § 102(b) is respectfully requested.

Amended claim 1 requires, at step c), that "the mixture from step (b)" is filled into a reservoir of a dry powder inhaler. This reservoir could be the reservoir of a multidose dry powder inhaler, as set forth in claim 13, or the reservoir defined by a capsule associated with a dry dose powder inhaler, as set forth in claim 14. Bystrom does not disclose this feature. Bystrom discloses dry powder inhalers containing formulations comprising agglomerates (col. 5, lines 61-63) or formulations which are not derived from agglomerates (col. 4., lines 57-65). There is no specific disclosure of filling a mixture of primary particles and carrier particles, wherein the primary particles were derived from an agglomerate, into the reservoir of a dry powder inhaler.

Moreover, the Examiner has alleged at page seven of the Office Action that "Bystrom contemplates mixing its agglomerated active ingredients with additives such as crystalline lactose monohydrate," referring to column 4, lines 31-56. Applicants disagree. This is a mischaracterization of the prior art. Bystrom makes no such disclosure. Specifically, Bystrom

does not disclose "combining a pharmaceutically active ingredient in the form of an agglomerate of primary particles [...] with a pharmaceutically acceptable carrier." Bystrom instead discloses three alternatives in column 4, lines 57-65: i) a composition in which "the entire composition may be in the form of particles of a size within the respirable particle size range"; ii) an alternative composition in which "the carrier may comprise coarser particles, of for example mass median diameter greater than 20 microns"; or iii) a composition comprising "agglomerates of the smaller particles, the agglomerates having a mass median diameter of for example greater than 20 microns." These embodiments are taught as alternatives. There is no specific disclosure of combining agglomerates of primary particles with a pharmaceutically acceptable carrier. Moreover, it is clear from the specific example that when agglomerates are present, no further carrier is combined with the agglomerates.

The Examiner has alleged that Bystrom anticipates step b) of claim 1. Applicants respectfully disagree. Again, the Examiner has mischaracterized the prior art and read features into Bystrom which are not, in fact, disclosed. The Examiner specifically refers to breaking up agglomerates into smaller particles for inhalation via manual shaking of the user or the mixing of air with the agglomerates to provide shear. However, neither of these activities are specifically disclosed by Bystrom. Bystrom only discloses that the agglomerates should be easily deagglomerated in an inhaler. Importantly, it is by no means inevitable that Bystrom discloses the feature of step b) of the claimed invention, namely "mixing the resultant material in a mixer to break up the agglomerate into primary particles dispersed in a pharmaceutically acceptable particulate carrier such that 90% or more of the pharmaceutically active ingredient exists as primary particles having a particle size of 50 μm or less."

Specifically, mixing the agglomerates with air to provide shear will result in primary particles dispersed in air, not primary particles dispersed in a pharmaceutically acceptable carrier, as required by step b). In addition, there is nothing in Bystrom to suggest that shaking the inhaler will not cause further agglomeration, rather than cause breaking down of the agglomerates, as the Examiner suggests. It is apparent from Example 1 of Bystrom that the agglomerates may be sieved without causing deagglomeration, so it is by no means inevitable that shaking an inhaler would provide sufficient shear to cause deagglomeration, let alone to the extent called for by step b.

Bystrom merely discloses that "the agglomerates should be friable, so that they may easily be deagglomerated for example in a powder inhaler"; however, because, as the Examiner has pointed out, this may include methods which do not result in "primary particles dispersed in a pharmaceutically acceptable particulate carrier," then it cannot be considered a clear and unambiguous disclosure of step b) of claim 1.

Furthermore, because the Examiner is relying on activity within the inhaler to disclose deagglomeration, it is all the more apparent that Bystrom does not disclose step c) of amended claim 1, in which the deagglomerated mixture is filled into a reservoir of a dry powder inhaler.

For at least these reasons, Bystrom does not anticipate the process of amended claim 1. Claims 2-10 and 13-15 depend from claim 1 and incorporate all the limitations of the base claim. Consequently, the dependent claims are also not anticipated by Bystrom. Withdrawal of this rejection is respectfully requested.

Claims 1 and 3-5 stand rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,518,998 to Backstrom et al. ("Backstrom"). Applicants respectfully disagree. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). For the reasons expressed below, Backstrom fails to recite every element of Applicants' invention. Accordingly, Bystrom does not anticipate claims 1 and 3-5. Reconsideration and withdrawal of this rejection under 35 U.S.C. § 102(e) is respectfully requested.

Amended claim 1 requires that 'the mixture from step (b)' is filled into a reservoir of a dry powder inhaler. Backstrom, like Bystrom, does not disclose this feature. Backstrom discloses two alternative formulation types: i) those comprising particles having a diameter of less than about 10 microns, or agglomerates of said particles; and ii) "ordered mixtures" in which the carrier consists of coarse particle. There is no clear and unambiguous disclosure of the combination of an agglomerate and a coarse carrier in the paragraph relied upon by the Examiner. Indeed, at col. 2, line 47-49, Backstrom specifically teaches that the active compounds are not in the form of agglomerates prior to the formation of the ordered mixture.

Backstrom does not therefore, as the Examiner contends, disclose mixing a coarse carrier and agglomerates. The Examiner has mischaracterized the prior art. Backstrom actually teaches against combining agglomerates and a coarse carrier in the very paragraph on which Examiner relies. Accordingly, there can be no clear and unambiguous disclosure of breaking up agglomerates by mixing the agglomerates with the carrier.

The Examiner relies on column 3, lines 30-35, as a disclosure of mixing the resultant mixture. However, in view of the above amendment, the argument is moot. The deagglomeration referred to in column 3, lines 30-35 occurs in the inhaler or during inhalation. Therefore, whether or not the deagglomeration referred to in column 3, lines 30-35 is mixing in a mixture within the meaning of claim 1, there can be no disclosure of filling the deagglomerated mixture into a reservoir of a dry powder inhaler because the mixture is either already in the reservoir or has left the inhaler during inhalation.

For at least these reasons, Backstrom does not disclose all of the features of claim 1 in combination. Claims 2-13 depend from claim 1 and incorporate all the limitations of the base claim. Consequently, the dependent claims are also not anticipated by Backstrom. Accordingly, Applicants request reconsideration and withdrawal of the rejection.

Claim 2 stands rejected under 35 U.S.C. § 103(a) as obvious based on Bystrom alone. For the reasons explained above, Bystrom does not disclose features b) and c) of the claimed invention. Put simply, because the Examiner is relying on hypothetical mixing within the inhaler, or while exiting the inhaler, to deagglomerate the particles, it cannot be obvious to then fill the deagglomerated particles and carrier into the reservoir of an inhaler because they are either already in the reservoir of the inhaler or being inhaled. Subsequent filling into a second reservoir would be nonsensical. None of the remaining prior art addresses this deficiency with Bystrom. Accordingly, Applicant requests reconsideration and withdrawal of the rejection.

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In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of claims 1-10 and allowance of claims 1-10 and 13-15.

Respectfully submitted,



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The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account Number 18-0350.

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